Attorney Docket No.: 019496-005820US Client Reference No.: S24-US3

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By: JAMVINA (TAMARA LIVENGOD)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Edward Rebar et al.

Application No.: 09/846,033

Filed: April 30, 2001

For: REGULATION OF

ANGIOGENESIS WITH ZINC FINGER

**PROTEINS** 

Assistant Commissioner for Patents Washington, D.C. 20231

Sir:

Examiner: Unassigned

Art Unit: 1646

INFORMATION DISCLOSURE STATEMENT UNDER 37 CFR §1.97 and §1.98

The references cited on attached form PTO/SB/08A and PTO/SB/08B are being called to the attention of the Examiner. Copies of the references are enclosed. It is respectfully requested that the cited references be expressly considered during the prosecution of this application, and the references be made of record therein and appear among the "references cited" on any patent to issue therefrom.

As provided for by 37 CFR 1.97(g) and (h), no inference should be made that the information and references cited are prior art merely because they are in this statement and no

Edward Rebar et al.
Application No.: 09/846,033

representation is being made that a search has been conducted or that this statement encompasses all the possible relevant information.

Applicant believes that <u>no fee is required</u> for submission of this statement, since it is being submitted prior to the first Office Action. However, if a fee is required, the Commissioner is authorized to deduct such fee from the undersigned's Deposit Account No. 20-1430. Please deduct any additional fees from, or credit any overpayment to, the above-noted Deposit Account.

Respectfully submitted,

Andrew T. Serafini, Ph.D

Reg. No. 41,303

TOWNSEND and TOWNSEND and CREW LLP Two Embarcadero Center, 8<sup>th</sup> Floor San Francisco, California 94111-3834

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## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Filing Date A
First Named Inventor R
Group Art Unit 16
Examiner Name U

**Application Number** 

09/846,033

April 30, 2001

Rebar, Edward, et al.

1646

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Sheet 1 of Attorney Docket Number 019496-005820US

			U.S. PATENT DOCU	MENTS	
Examiner Initials *	Cite No.1	U.S. Patent Document  Kind Code <sup>2</sup> (if known)	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	AA	6,140,466	Barbas III et al.	10/31/00	
	AB	6,140,081	Barbas	10/31/00	
	AC	6,140,073	Bayne et al.	10/31/00	RECEIVED
	AD	6,130,071	Alitalo et al.	10/10/00	RECEIVED
-	AE	6,040,157	Hu et al.	03/21/00	FEB 2 4 2004
	AF	6,013,453	Choo et al.	01/11/00	FEB 2 4 2004
	AG	6,007,988	Choo et al.	12/28/99	
	AH	6,007,408	Sandhu	12/28/99	
	Al	6,001,885	Vega et al.	12/14/99	
	AJ	5,994,300	Bayne et al.	11/30/99	
	AK	5,972,615	An et al.	10/26/99	
	AL	5,939,538	Leavitt et al.	08/17/99	
	AM	5,935,820	Rosen et al.	08/10/99	
	AN	5,932,540	Rosen et al.	08/03/99	
	AO	5,928,939	Eriksson et al.	07/27/99	
	AP	5,916,794	Chandrasegaran	06/29/99	
	AQ	5,871,907	Winter et al.	02/16/99	
	AR	5,871,902	Weininger et al.	02/16/99	
	AS	5,869,618	Lippman et al.	02/9/99	
	AT	5,840,693	Eriksson et al.	11/24/98	
	AU	5,792,640	Chandrasegaran	08/11/98	
	AV	5,789,538	Rebar et al.	08/04/98	·
	AW	5,776,755	Alitalo et al.	07/07/98	
	AX	5,702,914	Evans et al.	12/30/97	

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## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Application Number	09/846,033	
Filing Date	April 30, 2001	
First Named Inventor	Rebar, Edward, et al.	
Group Art Unit	1646	
Examiner Name	Unassigned	
Attorney Docket Number	019496-005820US	
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	AY	5,674,738	Abramson et al.	10/7/97	
	AZ	5,639,592	Evans et al.	6/17/97	
	ВА	5,607,918	Eriksson et al.	03/04/97	DEOEWED
	ВВ	5,597,693	Evans et al.	01/28/97	RECEIVED
	ВС	5,578,483	Evans et al.	11/26/96	
	BD	5,498,530	Schatz et al.	03/12/96	FEB 2 4 2004
	BE	5,487,994	Chandrasegaran	01/30/96	
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	вн	5,376,530	De The et al.	12/27/94	
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	во	5,324,818	Nabel et al.	06/28/94	
	BP	5,324,638	Tao et al.	06/28/94	
	BQ	5,302,519	Blackwood et al.	04/12/94	
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	вт	5,223,409	Ladner et al.	06/29/93	
	BU	5,219,739	Tischer et al.	06/15/93	
	BV	5,219,596	Tischer et al.	06/15/93	
	вw	5,198,346	Ladner et al.	03/30/93	

Examiner	Date
Signature	Considered

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Sheet 3 of

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-	Complete if Known	
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Examiner Name	Unassigned	
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		U.S. Patent Document			Pages, Columns, Lines,
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	ВХ	5,194,596	Smith et al.	03/16/93	RECEIVED
	BY	5,096,815	Ladner et al.	03/17/92	RECEIVED
	BZ	5,096,814	Aivasidis et al.	03/17/92	FFR 2 4 2004
	CA	5,073,492	Chen et al.	12/17/91	FEB 2 4 2004
	СВ	4,990,607	Katagiri et al.	02/5/91	
	СС	4,456,550	Dvorak et al.	06/26/84	

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Examiner Initials*	Cite No.1	Office	Foreign Patent Docum		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	Τ°
	CD		WO 00/45835		PCT	08/10/00		
	CE		WO 00/44903		PCT	08/03/00		
	CF		WO 00/42219		PCT	07/20/00		
	CG		WO 00/41566		PCT	07/20/00		
	СН		WO 00/37641		PCT	06/29/00		
	CI		WO 00/27878		PCT	05/18/00		
	CJ		WO 00/25805		PCT	05/11/00		
	СК		WO 00/23464		PCT	04/27/00		
	CL		WO 00/09148		PCT	02/24/00		
	СМ		WO 99/50290		PCT	10/07/99		
	CN		WO 99/48909		PCT	09/30/99		
	со		WO 99/47677		PCT	09/23/99		
	СР		WO 99/47656		PCT	09/23/99		
	ca		WO 99/46364		PCT	09/16/99		

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Complete if Known Substitute for form 1449A/PTO 09/846.033 **Application Number** INFORMATION DISCLOSURE April 30, 2001 Filing Date STATEMENT BY APPLICANT Rebar, Edward, et al. **First Named Inventor** 1646 Group Art Unit (use as many sheets as necessary) **Examiner Name** Unassigned 019496-005820US of Attorney Docket Number Sheet

			FO	REIGN PA	TENT DOCU	MENTS		
Examiner Initials*	Cite No.1	Office	Foreign Patent Docum	Kind Code <sup>5</sup> (if known)	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Cotumns, Lines, Where Relevant Passages or Relevant Figures Appear	T⁵
	CR		WO 99/45132		PCT	09/10/99		
	cs		WO 99/42474		PCT	08/26/99	RECEI	VED
	СТ		WO 99/41371		PCT	08/19/99		VEU
-	cu		WO 99/40197		PCT	08/12/99	RECEI	2004
	CV		WO 99/37671		PCT	07/29/99	. 20 2 4	2004
	cw		WO 99/36553		PCT	07/22/99		
	СХ		WO 99/33485		PCT	07/08/99		
	CY		WO 98/54311		PCT	12/03/98		
	CZ		WO 98/53060		PCT	11/26/98		<u> </u>
	DA		WO 98/53059		PCT	11/26/98		
	DB		WO 98/53058		PCT	11/26/98		
	DC		WO 98/53057		PCT	11/26/98		
	DD		WO 98/49300		PCT	11/05/98		
	DE		WO 98/33917		PCT	08/06/98		<u> </u>
	DF		WO 98/24811		PCT	06/11/98		
	DG		WO 98/10078		PCT	03/12/98		
	DH		WO 98/10071		PCT	03/12/98		
	DI		WO 98/07832		PCT	02/26/98		
	DJ		WO 97/27213		PCT	07/31/97		
	DK		WO 97/27212		PCT	07/31/97		
	DŁ		WO 97/17442		PCT	05/15/97		
	DM		WO 97/09427		PCT	03/13/97		
	DN		WO 97/05250		PCT	02/13/97		
	DO		WO 96/39515		PCT	12/12/96		

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	DP		WO 96/32475		PCT	10/17/96		
	DQ		WO 96/27007		PCT	09/06/96	DECE	/ED
	DR		WO 96/26736		PCT	09/06/96	RECEI	VED
	DS		WO 96/20951		PCT	07/11/96	FFR 2 4	<del>2004</del>
	DT		WO 96/11269		PCT .	04/18/96	FEB 2 4	2004
	DU		WO 96/11267		PCT	04/18/96		
	DV		WO 96/06166		PCT	02/29/96		
	DW		WO 96/06110		PCT	02/29/96		
	DX		WO 95/24473		PCT	09/14/95		
	DY		WO 95/19431		PCT	07/20/95		
	DZ		EP 0 935 001		EPO	08/11/95		<u> </u>
	EA		EP 0 875 567		EPO	11/04/98		abstract
	EB		EP 0 506 477		EPO	09/30/92		<u> </u>
	EC		EP 0 484 401		EPO	07/27/90		
	ED		EP 0 476 983		EPO	03/15/00		
	EE		EP 0 471 754		EPO	11/15/90		
	EF		EP 0 464 155		EPO	10/04/90		
	EG		EP 0 126 153		EPO	06/07/84		_
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### INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Complete if Known **Application Number** 09/846,033 April 30, 2001 **Filing Date** Rebar, Edward, et al. First Named Inventor **Group Art Unit** 1646 **Examiner Name** Unassigned

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of

Attorney Docket Number 019496-005820US

		OTHER PRIOR ART NON PATENT LITERATURE DOCUMENTS	24
Examiner Initials *	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	EH	Agarwal et al., "Stimulation of Transcript Elongation Requires both the Zinc Finger and RNA Polymerase II Binding Domains of Human TFIIS," <u>Biochemistry</u> , 30(31):7842-7851 (1991).	
	EI	Achen et al., "Vascular endothelial growth factor D (VEGF-D) is a ligand for the tyrosine kinases VEGF receptor 2 (Flk1) and vEGF receptor 3 (Flt4)," PNAS, 95:549-553 (1998).	
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	ЕМ	Barbas et al., "Semisynthetic combinatorial antibody libraries: A chemical solution to the diversity problem," PNAS, 89:4457-4461 (1992).	
	EN	Barbas, C. F., "Recent advances in phage display," <u>Curr. Opin. Biotech.</u> , 4:526-530 (1993).	
	EO	Bartsevich et al., 'Regulation of the MDR1 Gene by Transcriptional Repressors Selected using peptide Cominatorial Libraries," Mol. Pharmacol., 58:1-10 (2000).	
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	EQ	Beerli et al., "Positive and Negative Regulation of Endogenous Genes Designed by Transcription Factors," PNAS, 97: 1495-1500 (2000).	
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	ET	Berg et al., "The Galvanization of Biology: A Growing Appreciation for the Roles of Zinc," Science, 271:1081-1085 (1996).	

Examiner	,	Date
Signature		Considered

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Group Art Unit	1646		
Examiner Name	Unassigned		
Attorney Docket Number	019496-005820US		

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		OTHER PRIOR ART NON PATENT LITERATURE DOCUMENTS FEB 2	4 2
Examiner Initials *	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T²
	EU	Berg, J. M., "DNA Binding Specificity of Steroid Receptors," Cell, 57:1065-1068 (1989).	
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	EX	Bergqvist et al., "Loss of DNA-binding and new transcription trans-activation function in polyomavirus large T-antigen with mutation of zinc finger motif," Nuc. Acids Res., 18(9):2715-2720 (1990).	
	EY	Birkenhager, R., "Synthesis and physiological activity of heterodimers comprising different splice forms of vascular endothelial growth factor and placenta growth factor," Biochem. J., 316:703-707 (1996).	
_	EZ	Blaese et al., "Vectors in cancer therapy: how will they deliver?," <u>Cancer Gene Therapy</u> , 2(4):291-297 (1995).	
	FA	Cao, Y. "Heterodimers of Placenta Growth Factor/Vascular Endothelial Growth Factor,"  J. Biol. Chem., 271: 3154-3162 (1996).	
	FB	Cao, Y. "Placenta Growth Factor: Identification and Characterization of a Novel Isoform Generated by RNA Alternative Splicing," <u>Biochem. Biophys. Res Commun.</u> , 235: 493-498 (1997).	
	FC	Caponigro et al., "Transdominant genetic analysis of a growth control pathway," <u>PNAS</u> , 95:7508-7513 (1998).	
	FD	Carmeliet et al., "Abnormal blood vessel development and lethality in embryos lacking a single VEGF allel.," Nature, 380: 435-442 (1996).	
	FE	Carmeliet et al., "Impaired myocardial angiogenesis and ischemic cardiomyopathy in mice lacking the vascular endothelial growth factor isoforms VEGF 164 and VEGF 188," Nature Med., 5: 495-502 (1999).	
	FF	Celenza et al., "A Yeast Gene That Is Essential for Release from Glucose Repression Encodes a Protein Kinase," Science, 233:1175-1180 (1986).	

Examiner	Date	
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# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Application Number 09/846,033

Filing Date April 30, 2001

First Named Inventor Rebar, Edward, et al.

Group Art Unit 1646

Examiner Name Unassigned

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Sheet 8 of

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	FG	Cheng et al., "A Single Amino Acid substitution in Zinc Finger 2 of Adrlp Changes its Binding Specificity at two Positions in UAS1," J. Mol. Biol., 251:1-8 (1995).	
	FH	Cheng et al., "Identification of Potential Target Genes for Adr1p through Characterization of Essential Nucleotides in UAS1," Mol. Cellular Biol., 14(6):3842-3852 (1994).	
	FI	Choo et al., "A role in DNA binding for the linker sequences of the first three zinc fingers of TFIIIA," Nuc. Acids Res., 21(15):3341-3346 (1993).	
	FJ	Choo et al., "Advances in Zinc Finger Engineering," <u>Current Opinion in Structural Biology</u> , 10:33850-3860 (2000).	
	FK	Choo et al., "All wrapped up," Nature Structural Biology, 5(4):253-255 (1998).	
	FL	Choo et al., "Designing DNA-binding proteins on the surface of filamentous phage," <u>Curr.</u> <u>Opin. Biotechnology</u> , 6:431-436 (1995).	
	FM	Choo et al., "Physical basis of a protein-DNA recognition code," <u>Curr. Opin. Struct. Biol.</u> , 7(1):117-125 (1997).	
	FN	Choo et al., "Promoter-specific Activation of Gene Expression Directed by Bacteriophage-selected Zinc Fingers," J. Mol. Biol., 273:525-532 (1997).	
	FO	Choo, Y. and Klug, A. "Selection of DNA binding sites for zinc fingers using rationally randomized DNA reveals coded interactions." PNAS, 91:11168-11172 (1994).	
	FP	Choo, Y. and Klug, A. Toward a code for the interactions of zinc fingers with DNA: Selection of randomized fingers displayed on phage." PNAS, 91:11163-11167 (1994).	
	FQ	Choo, Y. et al. "In vivo repression by a site-specific DNA-binding protein designed against an oncogenic sequence." Nature, 372:642-645 (1994).	
	FR	Choo, Y., "End effects in DNA recognition by zinc finger arrays," Nuc. Acids Res., 26(2):554-557 (1998).	
	FS	Choo, Y., "Recognition of DNA methylation by zinc fingers," Nature Struct. Biol., 5(4):264-265 (1998).	
	Fī	Chua et al., J. "Interleukin 6 Induces the expression of Vascular Endothelial Growth Factor," <u>Biol. Chem.</u> , 271: 736-741 (1996).	

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Application Number	09/846,033			
Filing Date	April 30, 2001			
First Named Inventor	Rebar, Edward, et al.			
Group Art Unit	1646			
Examiner Name	Unassigned			
Attorney Docket Number	019496-005820US			

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	FU	Clarke et al., "Zinc Fingers in Caenorhabditis elegans: Finding Families and Probing Pathways," Science, 282:2018-2022 (1998).	
	FV .	Clauss, M., "The Vascular Endothelial Growth Factor Receptor Flt-1 Mediates Biological Activities," J. Biol. Chem., 271: 17629-17634 (1996).	
	FW	Cohen, et al., "Interleukin 6 Induces the Expression of Vascular Endothelial Growth Factor," The Journal of Biological Chemistry, 271(2):736-741 (1996).	:
	FX	"Collateral Therapeutics Inc. (CLTX) Announces Research On New Angiogenic Growth Factor Gene VEGF-138," (November 30, 2000) published at BioSpace.com.	
	FY	Connolly, "Vascular Permeability Factor: A Unique Regulator of Blood Vessel Funtion"  J. Cellular Biochem., 47: 219-223 (1991).	
	FZ	Corbi et al., "Synthesis of a New Zinc Finger Peptide; Comparison of Its 'Code' Deduced and 'CASTing' Derived Binding Sites," FEBS Letters, 417:71-74 (1997).	
	GA	Crozatier et al., "Single Amino Acid Exchanges in Separate Domains of the Drosophila serendipity δ Zinc Finger Protein Cause Embryonic and Sex Biased Lethality," <u>Genetics</u> , 131:905-916 (1992).	
	GB	Damert et al., Activator-protein-1 binding petentiates the hypoxia-inducible factor-1 mediated hypoxia-induced transcriptional activation of vascular-endothelial growth factor expression in C6 glioma cells," <u>Biochem. J.</u> 327: 419-423 (1997).	
	GC	Debs et al., "Regulation of Gene Expression in Vivo by Liposome-mediated Delivery of a Purified Transcription factor," J. Biological Chemistry, 265(18):10189-10192 (1990).	
	GD	Desjarlais et al., "Redesigning the DNA-Binding Specificity of a Zinc Finger Protein: A Data Base-Guided Approach," <u>Proteins: Structure, Function, and Genetics</u> , 12(2):101-104 (1992).	
	GE	Desjarlais et al., "Redesigning the DNA-Binding Specificity of a Zinc Finger Protein: A Data Base-Guided Approach," <u>Proteins: Structure, Function, and Genetics</u> , 13(3):272 (1992).	
	GF	Desjarlais, J.R. and Berg, J.M. "Length-encoded multiplex binding site determination: Application to zinc finger proteins," PNAS, 91:11099-11103 (1994).	

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Substitute for form 1449B/PTO Complete if Known **Application Number** 09/846,033 INFORMATION DISCLOSURE Filing Date April 30, 2001 STATEMENT BY APPLICANT **First Named Inventor** Rebar, Edward, et al. **Group Art Unit** 1646 (use as many sheets as necessary) **Examiner Name** Unassigned 019496-005820US Attorney Docket Number of Sheet

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	GG	Desjarlais, J.R. and Berg, J.M. "Toward rules relating zing finger protein sequences and DNA binding site preferences," PNAS, 90:7345-7349 (1992).	
	GH	Desjarlais, J.R. and Berg, J.M. "Use of a zinc-finger consensus sequence framework and specificity rules to design specific DNA binding proteins," PNAS, 90:2256-2260 (1993).	
	GI	Diaz et al., "Regulation of Vascular Endothelial Growth Factor Expression in Human Keratincytes by Retinoids," J. Biol. Chem., 275:642-650 (2000).	
	GJ	DiBello et al., "The Drosophila <i>Broad-Complex</i> Encodes a Family of Related Proteins Containing Zinc Fingers," Genetics, 129:385-397 (1991).	
	GK	Dreier et al. "Insights into the Molecular Recognition of the 5'GNN-3' Family of DNA Sequences by Zinc Finger Domains," J. Mol. Biol., 303:489-502 (2000).	
	GL	Elrod-Erickson et al., "High-resolution structures of variant Zif268-DNA complexes: implications for understanding zinc finger-DNA recognition," <u>Structure</u> , 6(4):451-464 (1998).	
	GM	Elrod-Erickson et al., "Zif268 protein-DNA complex refined at 1.6 Å: a model system for understanding zinc finger-DNA interactions," Structure, 4(10):1171-1180 (1996).	
	GN	Esakof et al., "Intraoperative Multiplane Transesophageal Echocardiography for Guiding Direct Myocardial Gene Transfer of Vascular Endothelial Growth Factor in Patients with Refractory Angina Pectoris," Hum. Gene Ther., 10:2307-2314 (1999).	
	GO	Fairall et al., "The crystal structure of a two zinc-finger peptide reveals an extension to the rules for zinc-finger/DNA recognition," Nature, 366:483-487 (1993).	
	GP	Ferrara et al., "Heterozygous embryonic lethality induced by targeted inactivation of thte VEGF gene," Nature, 380: pp. 439-442 (1996).	
	GQ	Ferrara et al., "The Vascular Endothelial Growth Factor Family of Polypeptides," <u>J</u> Cellular Biochem., 47:211-218.(1991).	
	GR	Forsythe et al., "Activation of Vascular Endothelial Growth Factor Gene Transcription by Hypoxia-Inducible Factor 1," Mol. Cell. Biol., 16:4604-4613 (1996).	
	GS	Frankel et al., "Fingering Too Many Proteins," Cell, 53:675 (1988).	

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Application Number 09/846,033

Filing Date April 30, 2001

First Named Inventor Rebar, Edward, et al.

Group Art Unit 1646

Examiner Name Unassigned

Attorney Docket Number 019496-005820US

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Application Number	09/846,033		
Filing Date	April 30, 2001		
First Named Inventor	Rebar, Edward, et al.		
Group Art Unit	1646		
Examiner Name	Unassigned		
Attorney Docket Number	019496-005820US		

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	HF	GenBank Acesion No. U80601 "Human novel unknown gene, partial 3'UTR, and VEGF-related factor (VRF) gene, promoter region," (02/05/97).	
`	НG	Gogos et al., "Recognition of diverse sequences by class I zinc fingers: Asymmetries and indirect effects on specificity in the interaction between CF2II and A+T-rich sequence elements," PNAS, 93(5):2159-2164 (1996).	
	нн	Ghosh, D., "A relational database of transcription factors," Nuc. Acids Res., 18(7):1749-1756 (1990).	
	н	Gossen et al., "Tight control of gene expression in mammalian cells by tetracycline-responsive promoters," PNAS, 89:5547-5551 (1992).	
	нл	Grant et al., "Exploring the Role of Glutamine 50 in the Homeodomain-DNA Interface: Crystal Structure of Engraled (Gln50→Ala) Complex at 2.0Å)," <u>Biochemistry</u> , 39:8187-8192 (2000).	
	нк	Greisman, H.A. and Pabo, C.O. "A general strategy for selecting high-affinity zinc finger proteins for diverse DNA target sites," <u>Science</u> , 275:657-661. (1997).	
	HL	Grunstein et al., "Isoforms of Vascular Endothelial Growth Factor Act in a Coordinate Fashino to Recruit and Expand Tumor Vasculature," Mol. Cell. Biol., 20:728-7291 (2000).	
	нм	Hamilton et al., "Comparison of the DNA Binding Characteristics of the Related Zinc Finger Proteins WT1 and EGR1," <u>Biochemistry</u> , 37:2051-2058 (1998).	
	HN	Hamilton et al., "High affinity binding sites for the Wilms' tumor suppressor protein WT1," Nuc. Acids Res., 23(2):277-284 (1995).	
	но	Hanas et al., "Internal deletion mutants of <i>Xenopus</i> transcription factor IIIA," <u>Nuc. Acids</u> <u>Res.</u> , 17(23):9861-9870 (1989).	
	HP	Hayes et al., "Locations of Contacts between Individual Zinc Fingers of Xenopus laevis Transcription Factor IIIA and the Internal Control Region of a 5S RNA Gene," <u>Biochemistry</u> , 31:11600-11605 (1992).	
	HQ	Heinzel et al., "A complex containing N-CoR, mSin3 and histone deacetylase mediates transcriptional repression," Nature, 387:43-48 (1997).	

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	HR	Hendel et al., "Effect of Intracoronary Recombinant Human Vascular Endothelial Growth Factor on Myocardial Perfusion," <u>Circulation</u> 101:118-121 (2000).	
	нѕ	Hirst et al., "Discrimination of DNA response elements for thyroid hormone and estrogen is dependent on dimerization of receptor DNA binding domains," PNAS, 89:5527-5531 (1992).	
	нт	Hoffman et al., "Structures of DNA-binding mutant zinc finger domains: Implications for DNA binding," Protein Science, 2:951-965 (1993).	
	ни	Ikeda et al., "Hypoxia-induced Transcriptional Activation and Increased mRNA Stability of Vascular Endothelial Growth Factor in C6 Glioma Cells," <u>J. Biol.Chem.</u> , 270: 19, 761-19, 766 (1995).	
	н٧	Isalan et al., "Comprehensive DNA Recognition through Concerted Interactions from Adjacent Zinc Fingers," <u>Biochemistry</u> , 37:12026-12033 (1998).	
	HW	Isalan et al., "Synergy between adjacent zinc fingers in sequence-specific DNA recognition," PNAS, 94(11):5617-5621 (1997).	
	нх	Isner et al., "Clinical evidence of angiogenesis after arterial gene transfer of phVEGF 165 in pateint with ischaemic limb," Lancet, 348:370-374 (1996).	
	нү	Jacobs, G. H., "Determination of the base recognition positions of zinc fingers from sequence analysis," EMBO J., 11(12):4507-4517 (1992).	
	HZ	Jamieson et al., "A zinc finger directory for high-affinity DNA recognition," PNAS, 93:12834-12839 (1996).	
	IA	Jamieson, A.C. et al. "In vitro selection of zinc fingers with altered DNA-binding specificity," <u>Biochemistry</u> , 33:5689-5695 (1994).	
	iВ	Joukov et al., "A novel vascular endothelial growth factor, VEGFC, is a ligand for the Flt4 (VEGFR-3) and KDR (VEGFR-2) receptor tyrosine kinases," <u>EMBO J</u> . 15:. 290-298 (1996).	
	IC	Julian et al., "Replacement of His23 by Cys in a zinc finger of HIV-1 NCp7 led to a change in 1H NMR-derived 3D structure and to a loss of biological activity," <u>FEBS</u> <u>Letters</u> , 331(1,2):43-48 (1993).	

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	ID	Kamiuchi et al., "New multi zinc finger protein: biosynthetic design and characteristics of DNA recognition," Nucleic Acids Symposium Series, 37:153-154 (1997).	
	ΙĖ	Kang et al., "Zinc Finger Proteins as Designer Transcription Factors," <u>J. Biol. Chem.</u> , 275(12):8742-8748 (2000).	
	IF	Keck et al., "Vascular Permeability Factor, an Endothelial Cell Mitogen Related to PDGF," Science, 246: 1309-1312 (1989).	
	IG	Kim et al., "A 2.2 Å resolution crystal structure of a designed zinc finger protein bound to DNA," Nat. Struct. Biol., 3(11):940-945 (1996).	
	IH	Kim et al., "Design of TATA box-binding protein/zinc finger fusions for targeted regulation of gene expression," PNAS, 94:3616-3620 (1997).	
	II	Kim et al., "Hybrid restriction enzymes: Zinc finger fusions to Fok I cleavage domain," PNAS, 93:1156-1160 (1996).	
	IJ	Kim et al., "Serine at Position 2 in the DNA Recognition helix of a Cys2-His2 Zinc finger Peptide is Not, in General, Responsible for Base Recognition," J. Mol. Biol., 252:1-5 (1995).	
	IK	Kim et al., "Site-specific cleavage of DNA-RNA hybrids by zinc finger/FokI cleavage domain fusions," Gene, 203:43-49 (1997).	
	IL	Kim, J-S. and Pabo, C.O. "Getting a handhold on DNA: Design of poly-zinc finger proteins with femtomolar dissociation constants," PNAS, 95:2812-2817 (1998).	
	IM	Kim, J-S. and Pabo, C.O. "Transcriptional repression by zinc finger peptides," The Journal of Biological Chemistry, 272:29795-28000 (1997).	
	IN	Kimura et al., "Hypoxia resonse element of the human vascular endothelial growth factor gene mediates transcriptional regulation by nitric oxide: control of hypoxia-inducible factor-1 activity by nitric oxide," <u>Blood</u> , 95: 189-197 (2000).	
	10	Kinzler et al., "The GLI gene is a member of the Kruppel family of zinc finger proteins," Nature, 332:371-4 (1988).	
	IP	Klug et al., "Protein Motifs 5: Zinc Fingers," FASEB J., 9:597-604 (1995).	

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	IQ	Klug, "Zinc Finger Peptides for the Regulation of Gene Expression," <u>J. Mol. Biol.</u> , 293:215-218 (1999).			
	IR	Klug, A., "Gene Regulatory Proteins and Their Interaction with DNA," Ann. NY Acad. Sci., 758:143-160 (1995).			
	ıs	Kothekar, "Computer Simulation of Zinc Finger Motifs from Cellular Nucleic Acid Binding Proteins and their Interaction with Consensus DNA Sequences," <u>FEBS Letters</u> , 274(1,2):217-222 (1990).			
	iT	Kriwacki et al., "Sequence-Specific Recognition of DNA by Zinc-Finger Peptides Derived from the Transcription Factor Sp1," PNAS, 89:9759-9763 (1992).			
	IU	Kudla et al., "The regulatory gene area mediating nitrogen metabolite repression in Aspergillus nidulans. Mutations affecting specificity of gene activation alter a loop residue of a putative zinc finger," EMBO J., 9(5):1355-1364 (1990).			
	IV	Ladoux et al., "Cobalt Stimulates the Expression of Vascular Endothelial Growth Factor mRNA in Rat Cardiac Cells," <u>Biochem Biophys. Res. Commun.</u> 204:794-798 (1994).	<u> </u>		
	ıw	Laird-Offringa et al., "RNA-binding proteins tamed," Nat. Structural Biol., 5(8):665-668 (1998).			
	ıx	Lee et al., "Vascular endothelial growth factor-related protein: A ligand and specific activator of the tyrosine kinase receptor Flt4," PNAS, 93: 1988=1992 (1996).			
	IY	Leung et al., k "Vascular Endothelial Growth Factor Is a Secreted Angiogenic Mitogen," Science, 246: 1306-1309 (1989).			
	ΙZ	Levy et al., Transcriptional Regulation of the Rat Vascular Endothelial Growth Factor Gene by Hypoxia," J. Biol. Chem., 270: 13,333-13, 340 (1995).			
	JA	Liu et al., "Hypoxia Regulates Vascular Endothelial Growth Factor Gene Expression in Endothelial Cells," Circ. Res., 77: 638-643 (1995).			
	JB	Liu, Q. et al. "Design of polydactyl zinc-finger proteins for unique addressing within complex genomes," PNAS, 95:5525-5530 (1997).			
	JC	Lyttle, D.J. et al., "Homologs of Vascular Endothelial Growth Factor are Encoded by the Poxvirsu Orf Virus," J. Virology, 68: 84-92 (1994).			

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Application Number	09/846,033
Filing Date	April 30, 2001
First Named Inventor	Rebar, Edward, et al.
Group Art Unit	1646
Examiner Name	Unassigned
Attorney Docket Number	019496-005820US

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-	JD	Maglione et al., "Isolation of a human placenta cDNA coding for a prtein related to the vascular permeability factor," PNAS, 88: 9267-9271 (1991).	
	JE	Mandel-Gutfreund et al., "Quantitative parameters for amino acid-base interaction: implications for prediction of protein-DNA binding sites," <u>Nuc. Acids Res.</u> , 26(10):2306-2312 (1998).	
	JF	Margolin et al., "Kruppel-associated boxes are potent transcriptional repression domains," PNAS, 91:4509-4513 (1994).	
•	JG	McNamara et al., "A novel four zinc-finger protein targeted against p190 (BcrAbl) fusion oncogene cDNA: utilizaiton of zinc-finger recognition codes," <u>Nucleic Acid Research</u> , 28(24):4865-4872 (2000).	
	JH	Meyer et al., "A Novel Vascular Endothelial Growth Factor Encoded by Orf virus, VEGF-E, mediates angiogenesis via signalling through VEGFR-2 (KDR) bu not VEGFR 1 (flt-1) receptor Tyrosine Kinases," <a href="EMBO J.">EMBO J.</a> , 18: 363-374 (1999).	
	JI	Migdal et al., "Neuropilin-1 Is a Placenta Growth Factor-2 receptor," J.Biol. Chem., 273:22272-22278 (1998).	
	IJ	Milanini et al., "p42/p44 MAP Kinase Module Plays a Key Role in the Transcriptional Regulation of the Vascular Endothelial Growth Factor Gene in Fibroblasts," <u>J. Biol.</u> Chem., 273: 18, 165-18,172 (1998).	
	JK	Mizushima et al., "pEF-BOS, a powerful mammalian expression vector," Nuc. Acids Res., 18(17):5322 (1990).	
<u> </u>	JL	Nakagama et al., "Sequence and Structural Requirements for High-Affinity DNA Binding by the WT1 Gene Product," Molecular and Cellular Biology, 15(3):1489-1498 (1995).	
	JM	Nardelli et al., "Base sequence discrimination by zinc-finger DNA-binding domains,"  Nature, 349:175-178 (1991).	
	JN	Nardelli et al., "Zinc finger-DNA recognition: analysis of base specificity by site-directed mutagenesis," Nuc. Acids Res., 20(16):4137-4144 (1992).	
	ìo	Nekludova et al., "Distinctive DNA conformation with enlarged major groove is found in Zn-finger—DNA and other protein—DNA complexes," PNAS, 91:6948-6952 (1994).	

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	JP	Ogawa, S. et al., A Novel Type of Vascular Endothelial Growth Factor, VEGF-E (NZ-7 VEGF), Preferentially Utilizes KDR/FLK-1 Receptor and Carries a Potent Mitotic Activity without Heparin-binding Domain," J. Biol. Chem., 273:31273-31282 (1998).	
	JQ	Olofsson et al., "Vascular endothelial growth factor B, a novel growth factor for endothelial cells," PNAS, 93: 2576-2581 (1996).	
	JR	Orkin et al., "Report and Recommendations of the Panel to Assess the NIH Investment in Research on Gene Therapy," NIH Homepage, 41 pages total (1995).	
	JS	Pabo et al., "Geometric Analysis and Comparison of Protein-DNA Interfaces: Why is there no simple code for recognition," J. Mol. Biol., 301:597-635 (2000).	
	JT	Pabo et al., "Protein-DNA Recognition," Ann. Rev. Biochem., 53:293-321 (1984).	
	JU	Pabo et al., "Systematic Analysis of Possible Hydrogen Bonds between Amino Acid Side Chains and B-form DNA," J. Biomolecular Struct. Dynamics, 1:1039-1049 (1983).	
	٦٧	Pabo, C. O., "Transcription Factors: Structural Families and Principals of DNA Recognition," Ann. Rev. Biochem., 61:1053-1095 (1992).	
	JW	Pavletich et al., "Crystal Structure of a Five-Finger GLI-DNA Complex: New Perspectives on Zinc Fingers," Science, 261:1701-1707 (1993).	
	JX	Pavletich et al., "Zinc Finger-DNA Recognition: Crystal Structure of a Zif268-DNA Complex at 2.1 Å," Science, 252:809-817 (1991).	
	JY	Pengue et al., "Kruppel-associated box-mediated repression of RNA polymerase II promoters is influenced by the arrangement of basal promoter elements," <u>PNAS</u> , 93:1015-1020 (1996).	
	JZ	Pengue et al., "Repression of transcriptional activity at a distance by the evolutionarily conserved KRAB domain present in a subfamily of zinc finger proteins," <u>Nuc. Acids Res.</u> , 22(15):2908-2914 (1994).	
	КА	Pengue et al., "Transcriptional Silencing of Human Immunodeficiency Virus Type 1 Long Terminal Repeat-Driven Gene Expression by the Kruppel-Associated Box Repressor Domain Targeted to the Transactivating Response Element," J. Virology, 69(10):6577-6580 (1995).	

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	КМ	Rhodes et al., "Zinc Fingers: They play a key part in regulating the activity of genes in many species, from yeast to humans. Fewer than 10 years ago no one knew they existed," Scientific American, 268:56-65 (1993).	
	KN	Rice et al., "Inhibitors of HIV Nucleocapsid Protein Zinc Fingers as Candidates for the Treatment of AIDS," Science, 270:1194-1197 (1995).	
	ко	Rivera et al., "A humanized system for pharmacologic control of gene expression," Nature Medicine, 2(9):1028-1032 (1996).	
	КР	Rollins et al., "Role of TFIIIA Zinc Fingers In vivo: Analysis of Single-Finger Function in Developing <i>Xenopus</i> Embryos," Molecular Cellular Biology, 13(8):4776-4783 (1993).	
	ка	Rosengart et al., "Angiogenesis Gene Therapy- Phase I Assessment of Direct Intramyocardial Administration of an Adenovirus Vector expressing VEGF121 cDNA to Individuals with Clinically Significant Severe Coronary Artery Disease," Circulation, 100: 468-474 (1999).	
	KR	Rosengart et al., "Six-Month Assessment of a Phase 1 Trial of Angiogenic Gene Therapy for the Treatment of Coronary Artery Disease Using Direct Intramyocardial Administration of an Adenovirus Vector Expressing the VEGF121 cDNA," Ann. Surg., 230: 466-470 (1999).	
	KS	Ruben et al., "Isolation of a rel-Related Human cDNA that Potentially Encodes the 65-kD Subunit of NF-kB," Science, 251: 1490-1493 (1991).	
	кт	Ryuto et al., "Induction of Vascular Endothelial Growth Factor by Tumor Necrosis Factor α in Human Glioma Cells," J. Biol. Chem., 271:28, 220-28, 228 (1996).	
	ки	Sadowski et al., "GAL4-VP16 is an unusually potent transcriptional activator," Nature, 335: 563-568 (1998).	
	κν	Saleh et al., "A Novel Zinc Finger Gene on Human Chromosome 1qter That Is Alternatively Spliced in Human Tissues and Cell Lines," <u>Am. J. Hum. Genet.</u> , 52:192-203 (1993).	
	кw	Salimath et al., "Expression of the vascular endothelial growth factor gene is inhibited by p73," Oncogene, 19: 3470-3746 (2000).	

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First Named Inventor	Rebar, Edward, et al.
Group Art Unit	1646
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	кх	Segal et al. 'Design of Novel Sequence-Specific DNA-binding proteins," <u>Current Opinion in Chemical Bilology</u> , 4:34-39 (2000).	
	кү	Segal et al. "Toward controlling gene expression at will: Selection and design of zinc finger domains recognizing each of the 5'-GNN-3' DNA target sequences," <u>PNAS</u> , 96:2758-2763 (1999).	
	KZ	Shi et al., "A direct comparison of the properties of natural and designed finger proteins," Chem. & Biol., 2(2):83-89 (1995).	
	LA	Shi et al., "DNA Unwinding Induced by Zinc Finger Protein Binding," <u>Biochemistry</u> , 35:3845-3848 (1996).	
	LB	Shi et al., "Specific DNA-RNA Hybrid Binding by Zinc Finger Proteins," Science, 268:282-284 (1995).	
	LC	Singh et al., "Molecular Cloning of an Enhancer Binding Protein: Isolation by Screening of an Expression Library with a Recognition Site DNA," Cell, 52:415-423 (1988).	
	LD	Skerka et al., "Coordinate Expression and Distinct DNA-Binding Characteristics of the Four EGR-Zinc Finger Proteins in Jurkat T Lymphocytes," <u>Immunobiology</u> , 198:179-191 (1997).	
	LE	Soker et al., "Neuropilin-1 Is Expressed by Endothelial and Tumor Cells as an Isoform-Specific Receptor for Vascular Endothelial Growth Factor," Cell, 92: 735-745 (1998).	
	LF	South et al., "The Nucleocapsid Protein Isolated from HIV-1 Particles Binds Zinc and Forms Retroviral-Type Zinc Fingers," <u>Biochemistry</u> , 29:7786-7789 (1990).	
	LG	Suzuki et al. "DNA recognition code of transcription factors in the helix-turn-helix, probe helix, hormone receptor, and zinc finger families," PNAS, 91:12357-12361 (1994).	
	LH	Suzuki et al., "Stereochemical basis of DNA recognition by Zn fingers," Nuc. Acids Res., 22(16):3397-3405 (1994).	
	LI	Swirnoff et al., "DNA-Binding Specificity of NGFI-A and Related Zinc Finger Transcription Factors," Mol. Cell. Biol., 15(4):2275-2287 (1995).	
	LJ	Taylor et al, "Designing Zinc-Finer ADR1 Mutants with Altered Specificity of DNA Binding to T in UAS1 Sequences," <u>Biochemistry</u> , 34:3222-3230 (1995).	

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	LK	Thiesen et al., "Amino Acid Substitutions in the SP1 Zinc Finger Domain Alter the DNA Binding Affinity to Cognate SP1 Target Site," <u>Biochem. Biophys. Res. Communications</u> , 175(1):333-338 (1991).		
	LL	Thiesen et al., "Determination of DNA binding Specificities of mutated zinc finger domains," FEBS Letters, 283(1):23-26 (1991).		
	LM	Thukral et al., "Alanine scanning site-directed mutagenesis of the zinc fingers of transcription factor ADR1: Residues that contact DNA and that transactivate," <u>PNAS</u> , 88:9188-9192 (1991).		
	LN	Thukral et al., "Alanine scanning site-directed mutagenesis of the zinc fingers of transcription factor ADR1: residues that contact DNA and that transactivate," PNAS, 90:7908 (1993).		
	LO	Thukral et al., "Localization of a Minimal Binding Domain and Activation Regions in Yeast Regulatory Protein ADR1," Molecular Cellular Biology, 9(6):2360-2369 (1989).		
	LP	Thukral et al., "Mutations in the Zinc Fingers of ADR1 That Change the Specificity of DNA Binding and Transactivation," Mol. Cell Biol., 12(6):2784-2792 (1992).		
	LQ	Thukral et al., "Two Monomers of Yeast Transcription Factor ADR1 Bind a Palindromic Sequence Symmetrically to Activate ADH2 Expression," Molecular Cellular Biol., 11(3):1566-1577 (1991).		
	LR	Vortkamp et al., "Identification of Optimized Target Sequences for the GLI3 Zinc Finger Protein," <u>DNA Cell Biol.</u> , 14(7):629-634 (1995).		
	LS	Wang et al., "Dimerization of Zinc Fingers Mediated by Peptides Evolved In Vitro from Random Sequences," PNAS, 96:9568-9573 (1999).		
	LT	Webster et al., "Conversion of the E1A Cys4 zinc finger to a nonfunctional His2, Cys2 zinc finger by a single point mutation," PNAS, 88:9989-9993 (1991).		
	LU	Whyatt et al., "The two zinc finger-like domains of GATA-1 have different DNA binding specificities," EMBO J., 12(13):4993-5005 (1993).		
	LV	Wilson et al., "In Vivo Mutational analysis of the NGFI-A Zinc Fingers*," J. Biol. Chem., 267(6):3718-3724 (92).		

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	ŁW	Witzgall et al., "The Kruppel-associated box-A (KRAB-A) domain of zinc finger proteins mediates transcriptional repression," PNAS, 91:4514-4518 (1994).	
	LX	Wolfe et al., "Analysis of Zinc Fingers Optimized Via Phage Display: Evaluating the Utility of a Recognition Code," J. Mol. Biol., 285:1917-1934 (1999).	
-	LY	Wolfe et al., "Combining structure-base design with phage display to create new Cys2His2 zinc finger dimers," Structure, vol 8(7):739-750 (2000).	
	ιz	Wolfe et al., "DNA Recognition by Cys2His2 Zinc Finger Proteins," <u>Annu. Rev. Biophys.</u> Struct., 3:183-212 (1999).	
	МА	Wright et al., "Expression of a Zinc Finger Gene in HTLV-I- and HTLV-II-transformed Cells," Science, 248:588-591 (1990).	
_	мв	Wu, H. et al. "Building zinc fingers by selection: Toward a therapeutic application." PNAS, 92:344-348 (1995).	
	мс	Yang et al., "Surface plasmon resonance based kinetic studies of zinc finger-DNA interactions," J. Immunol. Methods, 183:175-182 (1995).	
	MD	Yu et al., "A hairpin ribozyme inhibits expression of diverse strains of human immunodeficiency virus type 1," PNAS, 90:6340-6344 (1993).	
	ME	Zhang et al., "Synthetic Zinc Finger Transcription Factor Action at an Endogenous Chromosomal Site- Activation of the Human Erythropoietin gene," J. Biol. Chem., 275:33850-33860 (2000).	
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